

## ABSTRACT

A system including methods and apparatuses for responding to an entity's superposition of states. The system is also able to respond to a first entity's state of entanglement, as well as respond to either the superposition of states or entanglement of any other entity that is entangled with the first entity. The  
5 system is capable of effecting its responses to superpositions of states or entanglements in modes that can preserve or demolish the superposition of states or entanglements of the entities it interacts with. The system is able to selectively switch between these modes of responses, and can also effect its responses in a delayed-choice manner. The system also encompasses applications of the methods and apparatuses for purposes including quantum communication, quantum computation, and quantum cryptography.